

A Contribution to the Flora of Gangolihat Block in Pithoragarh District¹

BY

V. SINGH AND H. SINGH

School of Plant Morphology, Meerut College, Meerut

INTRODUCTION

The flora of the Kumaon hills is known through the collections of Strachey and Winterbottom made in the years 1846-49. The original catalogue was revised and supplemented by Duthie (1906). In 1927 Osmaston published the Forest Flora for Kumaon which enumerates only woody elements. Raizada (1934, 1941) also made some additions to the flora of Kumaon. More recently Jain (1956) and Bhargava & Gupta (1958) listed the plants of Nainital. The present work deals with the flora of Gangolihat block in Pithoragarh district studied by the authors during 1968.

GEOGRAPHY OF THE AREA

The Pithoragarh district is divided into two tehsils, Pithoragarh and Didihat. Gangolihat block is one of the two blocks of Pithoragarh tehsil. It occupies an area of about 1367 sq. km. and has mountains varying in elevation from 1200 to 2750 metres. The approximate bearings of Gangolihat are 29°50' N and 80°E. The rivers Ram Ganga and Saryu make the boundary of the Gangolihat block in east and south respectively.

SOIL AND CLIMATE

Limestones and quartzites and shales form the principal types of soils met within the area. The floor of the forest is rich in humus and organic contents and the soil is black in colour. On the slopes red loamy soil is prevalent.

The climate of Gangolihat is monsoonic temperate. Since no climatic data are available for Gangolihat, the information given here is

¹ Research contribution No. 92 from the School of Plant Morphology, Meerut College, Meerut.

based on the climatic data of Askote, the nearest place with a meteorological station. The average annual rainfall is about 2200 mm.; June, July and August are the wettest months, having three-fourth of the total precipitation. The remaining one-fourth is distributed throughout the year.

April, May and early part of June are the hottest months with maximum temperatures up to 30°C. During winter, beginning from November, the temperature drops until January and February, which are the coldest months, the average temperature ranges from 6 to 14° C, but frequently drops to freezing point or below. Snow comes from December to February and is heavy on the higher hills.

The humidity is highest during monsoon months, mid-June to mid-September being 70-90%. It gradually decreases until January, then again it increases lightly in the months of February and March and finally drops to an average of 40% until the advent of the rainy season.

VEGETATION

About three-fourths of the area of the Gangolihat block is covered with forest. The nature of the forest varies considerably with the exposure and with the quality of the soil. The northern slopes with black soil are more rich in vegetation. The valleys of Ram Ganga and Saryu rivers are covered with sal (*Shorea robusta*) forests. At higher altitudes up to 1000 metres, *Shorea robusta* and *Pinus roxburghii* form mixed communities. At elevations from 1000 to 1700 m. conifers become dominant, *Pinus roxburghii* forming pure communities. The areas from 1700 to 2700 m. are covered by forests of oaks with *Cedrus deodara* growing in some pockets particularly on northern slopes. *Quercus incana* and *Q. lanuginosa* are the dominant species in the oak forests. *Rhododendron arboreum* is the most common tree associated with oak forests and *Myrica fraquhaniana*, *Lyonia ovalifolia*, *Dendrobenthamidia capitata* and *Alnus nepalensis* are other common species.

In the forest of oak and deodar there is little undershrub. On dry exposures *Berberis aristata*, *B. asiatica*, *Desmodium tiliæfolium*, *Spiraea vacciniifolia*, *Elsholtzia polystachya* and *Plectranthus rugosus* are characteristic. On the cooler and wetter slopes, besides some of the above mentioned shrubs, species of *Salix* and *Viburnum* are common. In the undergrowth of ravines, species of *Indigofera*, *Sarcococca pruniformis*, *Myrsine africana*, *Osbeckia stellata* and *Prinsepia utilis* are prominent.

The more open glades of the forest are covered with *Boeninghausenia albiflora*, *Pimpinella diversifolia*, *Valeriana wallichii*, *V. hardwickii*, *Dipsacus manjitis*, *Bupleurum tenue*, species of *Anaphalis* and *Plectranthus*, etc.

The grassy slopes are covered with a luxuriant growth of *Potentilla*, *Gentiana*, *Polygonum*, *Anemone*, *Swertia*, *Ranunculus*, *Pedicularis*, *Eplobium*, *Polygala*, etc.

The oak forests have a rich growth of orchids. The epiphytic species occur on northern slopes which are damp and cool. *Dendrobium amoenum*, *D. alpestre*, *Cymbidium giganteum*, *Vanda cristata* and *Pholidota articulata* are the common epiphytic orchids of the oak forests. The terrestrial species include *Eria alba*, *Microstylis wallichii*, *Coelogyne cristata*, *Habenaria edgeworthi*, *Satyrium nepalense* and *Herminium angustifolium*.

Taxillus vestitus, *Viscum nepalense*, *V. japonicum* and *Korthalsella opuntia* commonly parasitise oak trees.

ENUMERATION OF SPECIES

The present work is primarily a record of the plants collected during three trips made in 1968. In this work Bentham and Hooker's system of classification has been followed. Hutchinson (1959) has been followed in splitting of the families. An attempt has been made to incorporate nomenclatural changes. Local names of the plants, where available, have also been given after the botanical names. Brief description of plants have been given followed by the localities of collections and their approximate altitude. Field numbers of each species are given in brackets after their description.

A total of 366 species of Angiosperms and 2 species of Gymnosperms representing 279 genera and 100 families have been listed in the following pages. The specimens cited in this work are deposited in the Herbarium of the School of Plant Morphology, Meerut College, Meerut.

DICOTYLEDONS

RANUNCULACEAE

Clematis buchananiana DC.

Climbing shrub with pale yellow flowers. Nandan hill, 2330 m. (5130).

Anemone obtusilobus D. Don

Herb with white flowers. Daula hill, 2230 m. (5381).

Thalictrum javanicum Blume

Herb with white flowers. Mallagarkha, 1660 m. (5282).

Ranunculus hyperboreus Rotteb. var. *radicans* Meyer

Creeping herb with yellow flowers. Goptari, 2000 m. (5448).

R. hirtellus Royle

Herb with bright yellow flowers. Daula hill, 2230 m. (5156).

R. sceleratus L.

Herb with pale yellow flowers. Mallagarkha, 1660 m. (5014).

R. laetus Wall.

Herb with bright yellow flowers. Mallagarkha, 1660 m. (5048).

Delphinium denudatum Wall.

Herb with spurred blue flowers. Daula hill, 2230 m. (5158).

MENISPERMACEAE

Stephania elegans Hook. f. & Thoms.

Climbing shrub with red purple flowers. Gangolihat, 2000 m. (5427).

S. glabra (Roxb.) Miers. (Loc. Gargee ganh)

Climbing shrub with green yellow flowers. Mallagarkha, 1660 m. (5308).

Cissampelos pareira L.

Climbing shrub with greenish yellow flowers. Gangolihat, 1800 m. (5234).

BERBERIDACEAE

Berberis chitria Ham. ex Ker. (Loc. Chuttar)

Spiny shrub with bright yellow flowers. Daula hill, 2230 m. (5148).

B. asiatica Roxb. (Loc. Kinmour)

Shrub with yellow flowers. Gangolihat, 1800 m. (5056).

FUMARIACEAE

Fumaria indica (Haussk.) Pugsley

Herb with pink flowers. Mallagarkha, 1660 m. (5017).

CRUCIFERAE

Sisymbrium wallichii Hook. f. & Thoms.

Herb with white flowers. Mallagarkha, 1660 m. (5025).

Capsella bursa-pastoris Medic.

Herb with white flowers. Mallagarkha, 1660 m. (5016).

Lepidium sativum L. (Loc. Halim)

Herb with white flowers. Mallagarkha, 1660 m. (5026).

VIOLACEAE

Viola canescens Wall.

Herb with lilac flowers. Daula hill, 2230 m. (5041).

POLYGALACEAE

Polygala tatriniowii Hegel.

Small herb with deep pink flowers. Goptari, 2000 m. (5435).

P. crotalarioides Buch.-Ham.

Perennial herb with purple flowers. Goptari, 2230 m. (5454).

P. chinensis Linn.

Herb with yellow flowers. Mallagarkha, 1660 m. (5268).

CARYOPHYLLACEAE

Silene conoidea L. (Loc. Tumaria)

Herb with pink flowers. Mallagarkha, 1660 m. (5015).

Cerastium glomeratum Thuill.

Viscid-pubescent herb with white flowers. Daula hill, 2230 m. (5076).

Stellaria media (L.) Vill. (Loc. Khusania)

Herb with white flowers. Mallagarkha, 1660 m. (5063).

Drymaria diandra Blume

Procumbent herb with white flowers. Mallagarkha, 1660 m. (5391).

HYPERICACEAE

Hypericum oblongifolium Choisy

Small shrub with yellow flowers. Daula hill, 2230 m. (5029).

H. uralum Buch.—Ham.

Shrub with yellow flowers. Mallagarkha, 1660 m. (5241).

H. japonicum Thunb.

Perennial herb with yellow flowers. Goptari, 2230 m. (5407).

THEACEAE

Camellia sinensis (L.) O. Ktze. (Loc. Chai)

Bushy shrub with white flowers (planted). Jhaltora, 2200 m. (5324).

DIPTEROCARPACEAE

Shorea robusta Gaertn. f. (Loc. Sal)

Large resinous tree with yellowish flowers. Banks of Ramganga, 880 m. (5444).

MALVACEAE

Malva sylvestris L.

Herb with pink-purple flowers. Gangolihat, 2000 m. (5343).

Sida cordata (Burm. f.) Borss

Trailing herb with yellow flowers. Mallagarkha, 1660 m. (5273).

Urena lobata L.

Erect undershrub with pink flowers. Mallagarkha, 1660 m. (5442).

Hibiscus cancellatus Roxb. (Loc. Kapasua)

Perennial herb with pale yellow flowers. Mallagarkha, 1660 m. (5295).

BOMBACACEAE

Bombax ceiba L.

Large handsome tree with crimson flowers. Mallagarkha, 1700 m. (5172).

STERCULIACEAE

Sterculia villosa Roxb.

Medium sized tree with yellow flowers. Daula hill, 2230 m. (5379).

TILIACEAE

Triumfetta pilosa Roth

Tall bristly herb with yellow flowers. Mallagarkha, 1660 m. (5296).

LINACEAE

Linum usitatissimum L. (Loc. Alsi)

Herb with blue flowers (naturalized). Mallagarkha, 1660 m. (5076).

Reinwardtia trigyna Planch. (Loc. Pyali)

Trailing undershrub with bright yellow flowers. Mallagarkha, 1660 m. (5023).

GERANIACEAE

Geranium nepalense Sweet

Herb with pale purple flowers. Mallagarkha, 1660 m. (5155).

G. ocellatum Camb.

Herb with pink flowers. Mallagarkha, 1660 m. (5047).

OXALIDACEAE

Oxalis corniculata L.

Herb with yellow flowers. Mallagarkha, 1660 m. (5164).

O. latifolia H.B. & K.

Herb with pink purple flowers. Mallagarkha, 1660 m. (5133).

BALSAMINACEAE

Impatiens thomsoni Hook. f. & Thoms.

Herb with pale pink spurred flowers. Mallagarkha, 1660 m. (5084).

RUTACEAE

Boeninghausenia albiflora Reichb.

Herb with white flowers. Daula hill, 2230 m. (5375).

Zanthoxylum armatum DC. (Loc. Timoor)

Small spinous tree with yellow flowers. Mallagarkha, 1660 m. (5119).

Murraya paniculata (L.) Jacq. (Loc. Chandanee)

Evergreen shrub with fragrant white flowers (planted). Gangolihat, 2000 m. (5213).

Citrus medica L. (Loc. Chookh)

Small tree with purplish white flowers (planted). Gangolihat, 2000 m. (5306).

C. sinensis L. (Loc. Narangi)

Moderate sized tree with white flowers (planted). Gangolihat, 2000 m. (5351).

C. aurantifolia (Christ.) Swingle (Loc. Nimbu)

Small tree with white flowers (planted). Gangolihat, 2000 m. (5307).

Aegle marmelos (L.) Correa (Loc. Bel)

Small deciduous tree with white flowers (planted). Ganayee, 1800 m. (5326).

MELIACEAE

Azadirachta indica Juss. (Loc. Neem)

Large tree with white flowers. Gangolihat, 1750 m. (5237).

Toona ciliata (L.) Roem (Loc. Tooni)

Large handsome tree with cream coloured flowers (planted). Gangolihat, 1750 m. (5203).

CELASTRACEAE

Euonymus pendulus Wall.

Small evergreen tree with white flowers. Daula hill, 2230 m. (5117).

Maytenus royleanus (Laws.) M. A. Rau

Spinous shrub with white flowers. Daula hill, 2230 m. (5176).

RHAMNACEAE

Zizyphus mauritiana Lamk. (Loc. Ber)

Spinous shrub with greenish flowers. Pali, 1200 m. (5216).

VITACEAE

Vitis vinifera L. (Loc. Angoor)

Woody climber with green flowers (planted). Gangolihat, 1750 m. (5046).

Ampelocissus rugosus (Wall.) Planch.

Climbing shrub with yellow green flowers. Mallagarkha, 1660 m. (5200).

Tetrastigma serrulatum (Roxb.) Planch.

Creeping shrub with yellow green flowers. Mallagarkha, 1700 m. (5322).

SAPINDACEAE

Sapindus mukorossi Gaertn. (Loc. Reetha)

Tall evergreen tree with purple flowers (planted). Mallagarkha 1660 m. (5202).

ANACARDIACEAE

Cotinus coggyria Scop.

Small tree with pale-purple flowers. Goptari, 2000 m. (5078).

Rhus parviflora Roxb.

Shrub with yellow green flowers. Nandan hill, 2400 m. (5305).

Mangifera indica L. (Loc. Aam)

Evergreen tree with pale yellow flowers (planted). (5166).

CORIARIACEAE

Coriaria nepalensis Wall.

Shrub with green flowers. Daula hill, 2230 m. (5096).

PAPILIONACEAE (FABACEAE)

Crotalaria prostrata L.

Herb with yellow flowers. Goptari, 2000 m. (5444).

C. albida Heyne

Herb with pale yellow flowers. Goptari, 2000 m. (5456).

C. calycina Schrank

Herb with yellow flowers. Goptari, 2000 m. (5447).

Trifolium repens L.

Procumbent herb with pinkish flowers. Mallagarkha, 1660 m. (5210).

Indigofera gerardiana Wall.

Herb with pink flowers. Daula hill, 2230 m. (5138).

I. dosua Buch.—Ham.

Shrub with red flowers. Daula hill, 2230 m. (5140).

Lespedeza cuneata G. Don

Erect undershrub with pale yellow flowers. Bhrugetam hill, 2660 m. (5167).

L. eriocarpa DC.

Small shrub with deep purple flowers. Daula hill, 2230 m. (5376).

Zornia gibbosa Span.

Grass-like herb with yellow flowers. Mallagarkha, 1660 m. (5244).

Smithia ciliata Royle

Herb with pale-blue flowers. Jeebal, 2000 m. (5414).

Alysicarpus glumaceus (Vahl) DC.

Diffuse herb with pale-pink flowers. Mallagarkha, 1660 m. (5270).

Desmodium tiliaefolium Don

Shrub with pale pink flowers. Gangolihat, 2000 m. (5429).

D. concinnum DC.

Pubescent shrub with purple-blue flowers. Gangolihat, 2000 m. (5432).

D. heterocarpum (L.) DC.

Under-shrub with purple flowers. Daula hill, 2220 m. (5310).

D. microphyllum DC.

Trailing herb with purple-blue flowers. Mallagarkha, 1600 m. (5272).

Vicia angustifolia L.

Suberect herb with pinkish flowers. Mallagarkha, 1600 m. (5022).

Lathyrus aphaca L.

Trailing herb with yellow flowers. Mallagarkha, 1660 m. (5030).

Shutteria involucrata W. & A.

Twining herb with pinkish-white flowers. Goptari, 2000 m. (5421).

Rhynchosia rothii Benth. ex Ait.

Trailing or climbing herb with dark red flowers. Goptari, 2000 m. (5449).

Moghania fruticosa (Wall.) Mukerjee

Small procumbent shrub with pink flowers. Goptari, 2000 m. (5290).

Atylosia scarabaeoides Benth.

Twining herb with yellow flowers. Mallagarkha, 1660 m. (5269).

CAESALPINACEAE

Cassia sophera L. var. **purpurea** Roxb.

Tall herb with bright yellow flowers. Mallagarkha, 1660 m. (5199).

C. mimosoides L.

Procumbent herb with yellow flowers. Mallagarkha, 1660 m. (5309).

Phanera vahlii (W. & A.) Benth. (Loc. Malu)

Climbing shrub with white flowers. Daula hill, 2230 m. (5163).

ROSACEAE

Prunus persica (L.) Stokes (Loc. Aru)

Small tree with pink flowers (planted). Gangolihat, 2000 m. (5123).

P. armeniaca L. (Loc. Khumani)

Small tree with white flowers (planted). Gangolihat, 2000 m. (5123).

P. domestica L. subsp. **institia** Hk. f. (Loc. Alubukhara)

Small tree with white flowers (planted). Gangolihat, 2000 m. (5211).

Prinsepia utilis Royle

Spiny shrub with white flowers. Mallagarkha, 1660 m. (5093).

Spiraea vacciniifolia Don

Shrub with white flowers. Daula hill, 2230 m. (5137).

Rubus paniculatus Smith (Loc. Kala Hisaloo)

Rambling shrub with white flowers. Daula hill, 2230 m. (5139).

R. ellipticus Smith var. **hirtus** Roxb. (Loc. Hisaloo)

Trailing shrub with white flowers. Daula hill, 2230 m. (5074).

R. niveus Thunb.

Shrub with dark pink flowers. Daula hill, 2230 m. (5151).

Potentilla indica (Andr.) Wolf. (Loc. Bhi-ka-phal)

Creeping herb with yellow flowers. Mallagarkha, 1660 m. (5012).

P. kleiniana W. & A.

Spreading herb with yellow flowers. Daula hill, 2230 m. (5060).

Agrimonia eupatoria L.

Herb with small yellow flowers. Daula hill, 2230 m. (5046).

Rosa moschata Mill.

Prickly climber with white flowers. Mallagarkha, 1660 m. (5152).

Pyrus sylvestris Mill. (Loc. Sabe)

Small tree with pink flowers (planted). Gangolihat, 2000 m. (5334).

P. communis L. (Loc. Naspati)

Small tree with white flowers (planted). Gangolihat, 2000 m. (5204).

P. pashia Buch.-Ham. ex D. Don (Loc. Mahle)

Spiny tree with pinkish flowers. Gangolihat, 2000 m. (5105).

Crataegus crenulata Roxb. (Loc. Gheengaroo)

Spiny shrub with white flowers. Mallagarkha, 1660 m. (5147).

SAXIFRAGACEAE

Bergenia ciliata (Royle) Raizada (Loc. Bansupari)

Herb with pink flowers. Daula hill, 2230 m. (5104).

CRASSULACEAE

Kalanchoë integra (Medik.) O. Ktze.

Fleshy herb with yellow flowers. Mallagarkha, 1700 m. (5366).

Sedum adenotrichum Wall.

Glandular herb with pinkish white flowers. Daula hill, 2220 m. (5170).

Bryophyllum calycinum Salisb.

Fleshy herb with pinkish flowers. Mallagarkha, 1700 m. (5171).

DROSERACEAE

Drosera peltata Smith

Herb with lunate leaves and pinkish-white flowers. Mallagarkha, 1660 m. (5329).

COMBRETACEAE

Terminalia chebula Retz. (Loc. Harh)

Large deciduous tree with yellowish flowers. Gangolihat, 2000 m. (5231).

MYRTACEAE

Psidium guajava L. (Loc. Amrood)

Small tree with white flowers (planted). Mallagarkha, 1660 m. (5286).

Syzygium cumini (L.) Skeels (Loc. Jamun)

Tree with greenish flowers (planted). Gangolihat, 2000 m. (5230).

MELASTOMACEAE

Osbeckia stellata Wall.

Bristly undershrub with pink-purple flowers. Goptari, 2230 m. (5168).

PUNICACEAE

Punica granatum L. (Loc. Darim)

Small tree with bright red flowers (planted). Gangolihat, 2000 m. (5088).

ONAGRACEAE

Hertmannia rosea G. Don

Herb with pink flowers. Mallagarkha, 1660 m. (5050).

SAMYDACEAE

Casearia graveolens Dalz.

Small tree with greenish yellow flowers. Mallagarkha, 1660 m. (5246).

C. elliptica Willd. (Loc. Kukari)

Small tree with greenish flowers. Mallagarkha, 1660 m. (5220).

CUCURBITACEAE

Trichosanthes bracteata (Lamk.) Voigt

Perennial climber with white flowers. Mallagarkha, 1660 m. (5132).

Zehneria umbellata Thw.

Climbing herb with pale yellow flowers. Mallagarkha, 1660 m. (5196).

BEGONIACEAE

Begonia picta Smith

Succulent herb with pale-pink flowers. Daula hill, 2230 m. (5332).

CACTIACEAE

Opuntia dillenii Haw.

Phylloclade with yellow flowers. Mallagarkha, 1600 m. (5451).

UMBELLIFERAE

Centella asiatica (L.) Urban

Prostrate herb with purple white flowers. Goptari, 2000 m. (5436).

Sanicula elata Buch.-Ham. ex D. Don

Herb with white flowers. Daula hill, 2000 m. (5137).

Bupleurum tenue Don

Herb with yellow flowers. Mallagarkha, 1660 m. (5297).

Pimpinella diversifolia DC.

Herb with white flowers. Daula hill, 2220 m. (5289).

Heracleum candicaus Wall.

Tall pubescent herb with white flowers. Bhragtam hill, 2660 m. (5173).

ARALIACEAE

Hedera helix C. B. Clarke

Climbing shrub with yellow-green flowers. Jeebal, 2000 m. (5401).

CORNACEAE

Dendrobenthamia capitata (Wall.) Hutch. (Loc. Bamour)

Small tree. Bhuvaneshwar, 2200 m. (5260).

CAPRIFOLIACEAE

Viburnum cotinifolium Don (Loc. Gui)

Shrub with white flowers. Goptari, 2000 m. (5143).

RUBIACEAE

Hedyotis lindleyana Hook. ex W. & A.

Decumbent herb with white flowers. Goptari, 2000 m. (5198).

Oldenlandia corymbosa L.

Herb with white flowers. Goptari, 2000 m. (5191).

O. gracilis DC.

Grass-like herb with dark purple flowers. Mallagarkha, 1660 m. (5135).

O. coccinea Royle

Herb with bright red flowers. Goptari, 2000 m. (5252).

Pavetta crassicaulis Bremek.

Small shrub with white flowers. Salikhate, 880 m. (5223).

Leptodermis lanceolata Wall.

Shrub with white flowers. Mallagarkha, 1660 m. (5358).

Borreria articularis (Linn. f.) F.N.Wils.

Herb with white flowers. Mallagarkha, 1660 m. (5311).

Rubia cordifolia L.

Rambling herb with dark red flowers. Gangolihat, 2000 m. (5327).

Galium rotundifolium L.

Trailing herb with white flowers. Mallagarkha, 1660 m. (5331).

G. aparine L.

Herb with white flowers. Gangolihat, 2000 m. (5008).

G. mollugo subsp. **asperifolium** (Wall.) Kitamura

Diffuse herb with red flowers. Gangolihat, 2000 m. (5361).

G. hirtiflorum Ref.

Trailing herb with red flowers. Goptari, 2000 m. (5394).

VALERIANACEAE

Valeriana jatamansi Jones

Herb with pinkish white flowers. Bhuvaneshwar, 2500 m. (5110).

V. hardwickii Wall.

Herb with white flowers. Daula hill, 2230 m. (5368).

DIPSACEAE

Dipsacus mitis D. Don

Robust herb with white flowers. Goptari, 2000 m. (5419).

COMPOSITAE (ASTERACEAE)

Vernonia cinerea Less.

Herb with pink-purple heads. Jeebal, 2000 m. (5403).

Adenostemma lavenia (L.) O. Ktze.

Viscid herb with white heads. Boyal, 1200 m. (5301).

Ageratum conyzoides L.

Herb with pale-blue heads. Mallagarkha, 1660 m. (5028).

Eupatorium reevesii Wall.

Shrub with pale-purple heads. Daula hill, 2230 m. (5400).

Dicrocephala integrifolia (L.f.) O. Ktze.

Herb with yellowish-white heads. Gangolihat, 2230 m. (5053).

Aster molliusculus Wall.

Herb with lilac heads. Goptari, 2000 m. (5160).

A. asperulus Nees

Herb with purple heads. Daula hill, 2230 m. (5420).

Conyza stricta Willd.

Herb with pale yellow heads. Mallagarkha, 1660 m. (5038).

Blumea fistulosa (Roxb.) Kurz

Herb with yellow heads. Mallagarkha, 1500 m. (5042).

B. lacera (Burm.f.) DC.

Herb with yellow heads. Mallagarkha, 1500 m. (5201).

Anaphalis triplinervis C. B. Clarke

Cottony herb with white heads. Goptari, 2000 m. (5417).

A. cinnamomea C. B. Clarke

Woolly herb with white heads. Goptari, 2000 m. (5396).

A. busua (Buch.-Ham.) Hand.-Maz.

Woolly herb with white heads. Mallagarkha, 1660 m. (5083).

A. contorta Hk.f.

Cottony herb with pale-yellow heads. Goptari, 2000 m. (5416).

Gnaphalium luteo-album L. subsp. **affine** (D.Don) Koster

Herb with white heads. Jeebal, 2000 m. (5103).

Inula cappa DC.

Aromatic shrub with pinkish heads. Nandan hill, 2250 m. (5108).

Carpesium cernuum L.

Herb with yellow heads. Daula hill, 2230 m. (5424).

C. trachelifolium Less.

Herb with yellow heads. Bhuvaneshwar, 2500 m. (5378).

Xanthium strumarium L.

Coarse herb with unisexual heads. Mallagarkha, 1660 m. (5265).

Siegesbeckia orientalis L.

Herb with yellow heads. Daula hill, 2230 m. (5325).

Eclipta prostrata (L.) L.

Herb with white heads. Mallagarkha, 1660 m. (5240).

Bidens biternata (Lour.) Merr. & Sherff

Herb with yellowish white heads. Gangolihat, 2000 m. (5101).

Galinsoga parviflora Cav.

Herb with white heads. Mallagarkha, 1660 m. (5020).

Artemisia vulgaris L. (Loc. Patii)

Aromatic undershrub with yellow heads. Mallagarkha, 1660 m. (5293).

Emilia sonchifolia DC.

Herb with purple heads. Mallagarkha, 1660 m. (5031).

Echinops niveus Wall. (Loc. Kanya)

Herb with purple spiny heads. Goptari, 2000 m. (5439).

Saussurea candicans C. B. Clarke

Erect herb with pale-red heads. Mallagarkha, 1660 m. (5082).

Youngia japonica (L.) DC.

Herb with pale-yellow heads. Mallagarkha, 1660 m. (5111).

Taraxacum officinale Wigg.

Herb with solitary yellow heads. Goptari, 2000 m. (5127).

Lactuca dissecta Don

Herb with pale-blue heads. Goptari, 2000 m. (5024).

Sonchus brachyotus DC.

Succulent herb with yellow heads. Mallagarkha, 1660 m. (5044).

(to be continued)